

# International Perspectives on Capital Requirements

Discussion  
by

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# Risk-Based Capital Requirements Have Consequences

- ▶ Banks, and the larger financial system, respond to changes in regulatory capital requirements.
- ▶ Examples of regulatory capital policies that fueled the growth of structured finance are:
  1. Starting in 2002 under Basel I, the U.S. lowered to 20% the risk-weights on highly-rated (AAA-AA) securitized tranches.
  2. In early 2000s, U.S. regulators permitted “liquidity guarantees” of asset-backed commercial paper conduits that had a 10% conversion factor (Acharya, Schnabl, Suarez *JFE* 2013).
- ▶ This session's three papers examine how changes in risk weights or targeted capital increases affect bank pricing and quantities.

# Comments on the Martins-Schechtman Paper

- ▶ Example of macroprudential regulation to curb risky lending.
- ▶ From Dec 2010 to Nov 2011, Brazil raised capital risk weights on long-maturity, high LTV auto loans from 75% to 150%.
- ▶ Brazilian Credit Register data is used to test whether targeted auto loan rates increased.
- ▶ The main findings are the
  - ▶ rise in risk weights increased targeted loan spreads by 219 basis points (bp).
  - ▶ subsequent reversion of risk weights decreased targeted loan spreads by 65 bp.
- ▶ The asymmetric response is consistent with a large literature showing that banks are quick (*slow*) to raise retail loan (*deposit*) rates as their cost of funding rises (e.g., Kahn, Pennacchi, Sopranzetti *JBus* 2005).

## Comments on Martins-Schechtman (continued)

- ▶ Let  $r_{L,t}$  and  $cs_t$  be the date  $t$  loan yield and credit spread.
- ▶ Let  $k_t$  be the loan's required equity ratio,  $r_E$  and  $r_D$  be investors' certainty equivalent return on equity and debt, and  $\tau$  be the corporate income tax rate. Then

$$r_{L,t} = cs_t + k_t \frac{r_E}{1 - \tau} + (1 - k_t) r_D \quad (1)$$

- ▶ If  $k_{t+1} = k_t + p$ , then

$$r_{L,t+1} - r_{L,t} = (cs_{t+1} - cs_t) + p \left( \frac{r_E}{1 - \tau} - r_D \right) \quad (2)$$

- ▶  $k_t = 0.11 \times 0.75$ ,  $k_{t+1} = 0.11 \times 1.5$ , so  $p = 0.0825$ . Also since the paper estimates  $r_{L,t+1} - r_{L,t} \approx 0.0219$ , if  $cs_{t+1} = cs_t$  then (2) implies

$$\frac{r_E}{1 - \tau} - r_D = \frac{r_{L,t+1} - r_{L,t}}{p} = \frac{0.0219}{0.0825} = 0.2655 = 2,655 \text{ bp}$$

## Comments on Martins-Schechtman (continued)

- ▶ For example, if  $r_D = 10\%$ , then  $\frac{r_E}{1-\tau} = 36.55\%$ .
- ▶ The corporate tax rate for Brazilian banks was  $\tau = 0.40$ , implying  $r_E = 21.9\%$ .
- ▶ This seems unrealistic. More likely  $cs_{t+1} > cs$ .
- ▶ Why? When the same borrower takes out a second loan shortly after the first, total indebtedness rises.
- ▶ A sequence of loans to the same borrower may not keep creditworthiness constant.

# Comments on the Basten-Koch Paper

- ▶ On 13 Feb 2013, Switzerland imposed a 1% Countercyclical risk-weighted equity Capital Buffer (CCB) **only on residential mortgages**.
  - ▶ Covers both new and existing mortgages.
  - ▶ High LTV mortgages had higher risk weights.
  - ▶ Assuming  $\frac{r_E}{1-\tau} - r_D = 3.84\%$ , expect average  $r_{L,t+1} - r_{L,t} = 1.54 \text{ bp}$ .<sup>1</sup>
- ▶ Great Comparis dataset on binding mortgage offers.
  - ▶ Average 5-6 offers.
  - ▶ Detailed information on mortgage, borrower, and lenders.
  - ▶ Includes bank and insurance company lenders.
- ▶ Regression analysis of before and after CCB is carefully done.
- ▶ Some findings are expected, others very puzzling.

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<sup>1</sup>Might be a bit higher if consider corporate income tax effects.

## Comments on Basten-Koch (continued)

- ▶ Finds post CCB, capital constrained and mortgage-specialized banks raised offers more than others.
  - ▶ Since CCB covers existing mortgages, these banks could raise their capital ratios by “shrinking” their balance sheets.
- ▶ Does not find relatively higher offers for high LTV mortgages.
  - ▶ Effect of higher risk weights too small to detect?
- ▶ Finds insurers raised rates more than banks.
  - ▶ Very puzzling since insurers are a “non-treated control.”
  - ▶ Higher rates by insurers  $\neq$  desire by insurers to raise profits.
  - ▶ Most (all?) models predict that if bank funding costs rise more, profit-maximizing insurers should raise rates less.
- ▶ Securitization of Swiss mortgages may increase with higher required capital.

# Comments on the Demir-Michalski-Örs Paper

- ▶ Role of Commercial Letter of Credit (CLC):
  1. A Turkish exporter receives a CLC from importer's bank guaranteeing future payment.
  2. Exporter presents CLC to his/her Turkish bank for immediate payment less a fee.
  3. Turkish bank faces default risk of foreign bank payment, with a credit risk weight linked to CLC maturity and the foreign bank's (Fitch, Moody's, S&P) credit rating.
- ▶ In July 2012, Turkey adopted Basel II Standardized approach, changing CLC risk weights.
- ▶ Ministry of Customs and Trade data has Turkish exports to 174 countries by industry and CLC, CIA, OA.
  - ▶ Assume foreign bank rating is country average.
  - ▶ CLC maturities unknown.

# Comments on Demir-Michalski-Örs (continued)

- ▶ Risk weights rose from 20% to 50% on CLCs from A+ to BBB- rated OECD banks.
  - ▶ 1% greater required capital decreased exports by 0.5%.
  - ▶ for industries with above median use of CLCs, CLC-backed exports declined 68%!
- ▶ Risk weights fell from 100% to 20% (50%) on CLCs from AAA to AA- (A+ to BBB-) rated non-OECD banks.
  - ▶ 1% less required capital increased exports by 1.0%.
- ▶ Elasticity of CLC exports wrt risk weights reflect both Turkish bank's elasticity of CLC fees wrt to required capital and elasticity of exports wrt CLC fees. Identify each?
- ▶ Welfare effect is uncertain if CIA or OA substitute CLCs.
  - ▶ CLCs support 6.4% (17.9%) of exports to OECD (*non-OECD*).

# Conclusions

- ▶ As more countries adopt Basel II/III, expect more changes in banks'
  - ▶ pricing of financial services.
  - ▶ on- versus off-balance sheet activity (securitization).
- ▶ These changes in capital requirements will provide opportunities to study the cost of equity capital and the elasticities of bank services.